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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/757,499	01/15/2004	Chun Ho Fan	50626.65	6310
35510	7590	03/29/2005	EXAMINER	
KEATING & BENNETT, LLP			LEE, CALVIN	
10400 EATON PLACE			ART UNIT	
SUITE 312			PAPER NUMBER	
FAIRFAX, VA 22030			2818	

DATE MAILED: 03/29/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

✓ ✓

Office Action Summary	Application No.	Applicant(s)	
	10/757,499	FAN et al.	
	Examiner	Art Unit	
	Lee, Calvin	2818	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 February 2005 (Election).
2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
4a) Of the above claim(s) 20-30 is/are withdrawn from consideration.
5) ☒ Claim(s) 5-19 is/are allowed.
6) ☒ Claim(s) 1-4 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 15 January 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/15/04 & 3/03/05</u> | 6) <input type="checkbox"/> Other: _____ |

OFFICE ACTION

Response to Election

1. The Election of claims 1-19, dated Feb. 15, 2005, is acknowledged. The non-elected claims 20-30 have been withdrawn from further consideration.

Claim Objection

2. Claim 5 is objected to because of the following informality:
Claim 5, line 11, replace "thereon and pads of" with --thereon and said die attach pads of--

Claim Rejections - 35 U.S.C. § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 (e) that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claim 1 is rejected under 35 U.S.C. 102(b) as anticipated by *Applicant' Prior Art (APA)*.

APA discloses a process for fabricating an electronic component, comprising the steps of:
-forming a plating mask for the electronic component on a first surface of a metal carrier [page 2, "a leadframe strip is selectively covered with a thin layer photoresist mask"]
-depositing a plurality of metallic layers on exposed portions of one surface of the metal carrier ["an etch-barrier is deposited as the first layer of the contact pads and die attach pad, followed by several layers of metals"]
-and stripping the mask from the metal carrier to thereby leave the metallic layers in the form of the electronic component ["the photo-resist mask is then rinsed away ... formation of the contact pads allows plating of the pads in a columnar shape and into a mushroom cap or rivet-shape as it flows over the photoresist mask"].

Claim Rejections - 35 U.S.C. § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office Action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over *APA*, as applied to claim 1, in view of *Beddingfield* (US 5,726,502).

APA is silent about a photo-imageable mask. Nevertheless, such photolithographic technique is known the semiconductor etching art as evidenced by *Beddingfield* disclosing, "a phot-imageable mask would be formed ..., and photolithographically patterned and developed to create openings in the photo-imageable mask" [col. 6, ln.10].

It would have been obvious to one with ordinary skill in the art to modify the mask formation of *APA* by utilizing a photo-imageable mask technique for the purpose of forming a precise opening on the metal carrier.

Allowable Subject Matter

7. Claims 5-19 are allowed because none of the cited arts teaches or suggests, *inter alia*, each die attach pad having a respective semiconductor die mounted thereon and being electrically connected to one of contact pads and to one additional electronic component.


Contact Information

8. Any inquiry concerning this communication from the Examiner should be directed to *Calvin Lee* at (571) 272-1896 on Mondays thru Thursdays 6:30-4:30PM. If attempts to reach the examiner by telephone are unsuccessful, Art Unit 2818's Supervisory Patent Examiner *David Nelms* can be reached at (571) 272-1787. The fax phone number for the organization (where this application is assigned to) is (703) 872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system at <http://pair-direct.uspto.gov>. Should you have questions on access to the PAIR system, contact the Electronic Business Center at (866) 217-9197.



March 24, 2005



David Nelms
Supervisory Patent Examiner
Technology Center 2800